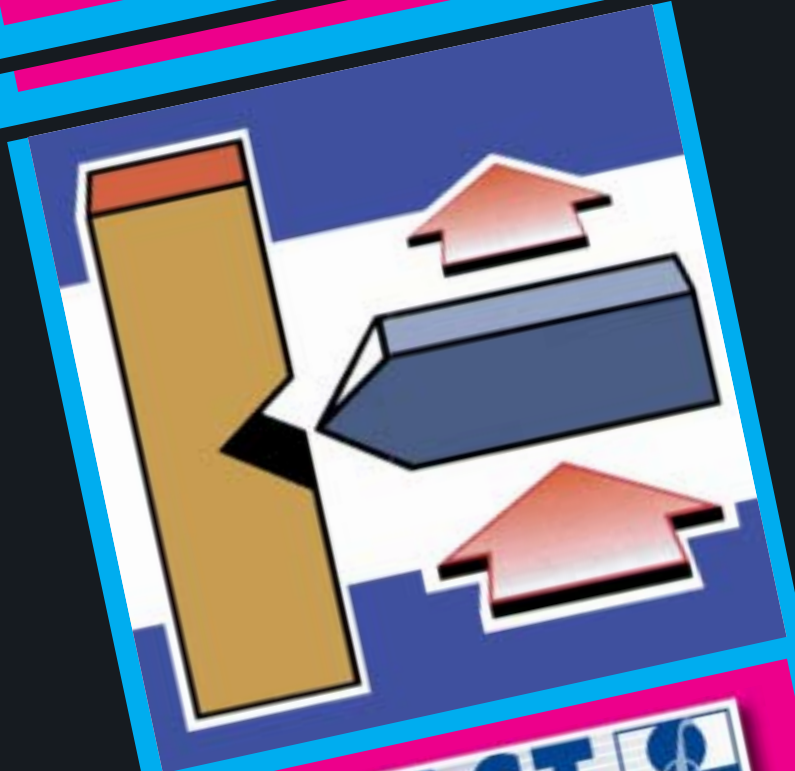


AUTOMATIC NOTCHVIS PLUS



CEAST 

DESIGN AND PRODUCTION OF
INSTRUMENTS AND APPARATUS
FOR QUALITY CONTROL
ON MATERIALS



These instruments are made in
compliance with CE health
and safety requirements





Soft-touch keypad to set up parameters



Detail of a notch obtained on ABS specimen using Automatic Notchvis. (The quality of the notch is evident)



Specimen loader

Scope

The new CEAST Automatic Notchvis Plus is designed for laboratories which need to perform a large number of impact tests, and currently spend a lot of time and human resources preparing highly accurate and reproducible specimens.

In order to give laboratories the opportunity to save time and money, CEAST has developed this instrument, which can notch for example 50 specimens each 4 mm thick in a single cycle with utmost accuracy. This instrument may also be equipped with a special accessory that slices the ends of multipurpose specimen ISO 3167 and ASTM D 638. This results in specimens with the shape and size suitable for impact and HDT tests.

Standards

Designed and built to meet the following standards:

- ISO 179, ISO 180, ISO 8256
- ASTM D 256, ASTM D 6110, ASTM D 638
- DIN 53435 Dynstat, DIN 53453, DIN 53448, DIN 53753
- BS 2782 - 350, BS 2782 - 359
- JIS K7110, JIS K7111

and other equivalent.

Notching System

The Notching System is made up of interchangeable constant profile knives, assembled on a mechanical precision slide, with interchangeable specimen loaders. The wide range of knives available allows the notching of the specimens according to the dimensions required by the standards (see the table on page 4). The use of interchangeable specimen loaders permits preparing, not only the traditional specimen notching on one side, but also the "Double-notched specimen". This particular specimen is used in the Charpy impact test for the investigation of the influence of surface effects according to ISO 179-1 and in tensile impact test according to ISO 8256, specimen type 1. The constant profile knives, which are assembled on a mechanical precision slide, have a linear cutting motion which guarantees an improved notching precision compared to those obtainable by other cutting methods.

A soft keypad allows the user to input all the necessary parameters such as remaining depth (notch depth) and single pass depth; the instrument will then automatically complete the desired work cycle. A digital display indicates all the working parameters, such as: set remaining depth, actual remaining depth, single pass depth and cutting speed.

Versatility

The Automatic Notchvis Plus is designed to more than satisfy the requirements of ISO 2818. The cutting speed and the feed rate of the specimen loaders are both adjustable in order to cope with the variables that affect the accuracy of specimen notching, such as the polymer family, the elasticity and recovery characteristics of the material, etc.

Cutting speed

The cutting speed is adjustable between 1 and 21 m/min via a stepping motor, so that the Automatic Notchvis Plus can easily cover the knife speed range required by international standards.

Single pass depth

The single pass depth, regulated by the specimen loader feed, can be selected via keyboard, and it is adjustable from 0.01 to 0.25 mm.

Remaining depth

The remaining depth can be selected via keyboard according to the standards. By means of the ancillary equipment code 6819.010, it is possible to check the remaining depth of notched specimens.

Both single pass depth and remaining depth are derived from the movement of the specimen loader feed.

Automatic knife zeroing

A high accuracy sensor allows to carry out the automatic zeroing of the knife position when the instrument is switched on. This advanced feature allows a high accuracy and repeatability in the remaining depth as well as a remarkable time saving.

Optional knife cooling system

The instrument may be optionally equipped with an accessory (code 6867.002) which, using compressed air, cools the knife during notching operation. Thanks to the linear cutting motion, exclusively developed by CEAST, this option is not necessary in the normal use of the instrument. This system is suggested only when notching materials that are highly sensitive to local heating on the edge of the notch or in cases of very high cutting speeds.

Advanced cutting system

The new Automatic Notchvis Plus is a microprocessor controlled unit, designed, not only to notch impact specimens in a very precise, automatic and rapid way according to the above standards, but also to produce specimens in various sizes in order to obtain dimensions suitable to several tests. Equipped with the specimen ends slicing device (code 6867.001), which has to be ordered together with the instrument, the Automatic Notchvis Plus becomes an irreplaceable instrument for the specimen preparation. It can make rectangular specimens from ASTM D 638 Type 1 and ISO 3167 Type A dumb-bell specimens; larger rectangular specimens can be reduced in length. The specimen lengths obtainable by slicing the ends are 57 mm, 63.5 mm and 80 mm. Cutting of the extremities of the specimens is obtained using two rotating blades, which, working together, grant a very quick and precise product.

Specimen loaders

The motorized specimen loader feed, controlled by a stepping motor, automatically advances the specimens at an adjustable rate into the cutting path of the knife until the preset remaining depth is reached. In this way it is possible to confirm the accuracy of the remaining depth (or notch depth) of the specimen (i.e. the resilient area). The three different loaders available have been designed according to the operations which can be performed by the instrument:

| Loader code | Operation | Specimens |
|-------------|------------------------------------|---|
| 6867.006 | Specimen ends slicing and notching | Multipurpose specimen according to ASTM D 638 Type 1 and to ISO 3167 Type A; specimen length: from 50 to 210 mm |
| 6867.004 | Notching | Specimen lengths: 50 - 63.5 - 80 - 120 - 127 mm; specimen width: from 4 to 15 mm |
| 6867.005 | Double notching | Specimens 4 x 10 x 80 mm according to ISO 179-1 and ISO 8256 |

The maximum number of specimens that can be simultaneously notched corresponds to the total available length of 200 mm.

Interchangeable knives (re-sharpenable)

A complete set of interchangeable knives is available according to the table at page 4.

All knives are designed with constant profile which makes re-sharpening simple, and gives a longer cutting life.

Depending on the hardness of the material to be notched, knives are available in:

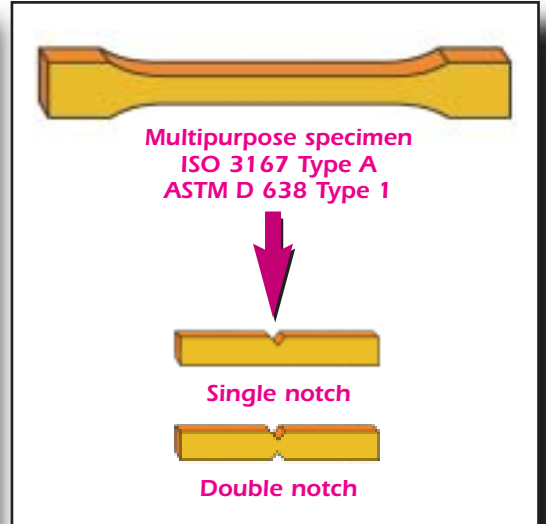
- cobalt steel
- tungsten carbide.

Safety

The Automatic Notchvis Plus, developed in accordance with full safety requirements, provides total enclosure of all moving parts.

It is not possible to start a cutting cycle if the door is open. If the operator opens the door during the cutting cycle the Automatic Notchvis Plus will automatically stop.

Moreover an Emergency push button is provided.



| Standards | Characteristics of the notch (according to standards) | Cobalt steel knives code | Tungsten carbide knives code |
|---|--|-----------------------------|---------------------------------|
| ISO 179 Type B ISO 180 Type B ASTM D 256 Method D BS 2782-350 Type B BS 2782-359 Type B JIS K7110 Type B JIS K7111 Type B and other equivalent | V notch $45^\circ \pm 1^\circ$ $r = (1 \pm 0.05)$ mm | 6819.119 | 6819.096 |
| ISO 8256 Type 1 DIN 53448 Tab. 2 and other equivalent | V notch $45^\circ \pm 1^\circ$ $r = (1 \pm 0.02)$ mm | | |
| ASTM D 256 Method D | V notch $45^\circ \pm 1^\circ$ $r = (0.5 \pm 0.05)$ mm | 6819.314 | 6819.313 |
| ISO 179 Type A ISO 180 Type A ASTM D 256 fig. 5 BS 2782-350 Type A and other equivalent | V notch $45^\circ \pm 1^\circ$ $r = (0.25 \pm 0.05)$ mm | 6819.113 | 6819.100 |
| ISO 179 Type C DIN 53753 Tab. 3 and other equivalent | V notch $45^\circ \pm 1^\circ$ $r = (0.1 \pm 0.02)$ mm | 6819.130 | 6819.097 |
| BS 2782-359 Type C DIN 53453 fig. 1 JIS K7111 Type C and other equivalent | Parallel flat sides (2 ± 0.2) mm | 6819.115 | 6819.094 |
| BS 2782-359 Type C DIN 53435 Dynstat DIN 53453 fig. 2 JIS K7111 Type C and other equivalent | Parallel flat sides (0.8 ± 0.1) mm | 6819.114 | |

Technical Data

| | |
|---------------------------------------|---|
| ▪ Overall dimensions (L x D x H) [mm] | 1100 x 610 x 460 |
| ▪ Weight [kg] | 165 |
| ▪ Supply | 230 V - 50/60 Hz Singlephase (110 V on request) |
| ▪ Power [kW] | 1 |
| ▪ Paint | fuchsia Ral 4006 - gray Ral 7035 |
| ▪ Compressed air | Required with accessory 6867.002 |

"Due to the continuous development policy of CEAST's Research and Development Department, changes may be introduced without notice"



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